What is claimed:

1.   A method of processing data in a radiation procedure, the method comprising:

5   obtaining a first set of image data;

obtaining operation data;

putting the operation data into a format that is the same as a format of the first set of image data; and

adding the operation data to the first set of image data.

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2.   The method of claim 1, wherein the obtaining the first set of image data comprises reading the first set of image data from a detector array.

3.   The method of claim 1, wherein the obtaining the first set of image data

15   comprises collecting the first set of image data from a camera.

4.   The method of claim 1, wherein the operation data comprises one or a combination of a gantry angle, a patient position, a patient orientation, radiation dose rate, radiation dose fraction, beam pulse rate, beam energy, time when

20   beam was activated, time when beam was deactivated, beam variation during an image readout, machine axis information, and machine status information .

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5. The method of claim 1, wherein the putting comprises formatting the operation data into a second set of image data.

6. The method of claim 5, wherein the formatting comprises converting the

5 operation data into a line of pixels.

7. The method of claim 1, wherein the obtaining the operation data comprises applying a radiation beam pulse using a radiation system, and collecting data associated with an operation of the radiation system.

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8. The method of claim 7, wherein the radiation beam pulse has an energy level that is in the kilo-electron-volts range.

9. The method of claim 7, wherein the radiation beam pulse has an energy

15 level that is in the mega-electron-volts range.

10. The method of claim 7, wherein the radiation beam pulse is being used to deliver a radiation treatment dose to a patient.

20 11. The method of claim 10, wherein the obtaining the first set of image data comprises determining a number of lines of image data that can be read from a detector array within a period.

12.	The method of claim 11, wherein the period comprises a time gap between the radiation beam pulse and a next radiation beam pulse.

5	13.	The method of claim 11, wherein the period is determined by subtracting a wait duration from a time gap between the radiation beam pulse and a next radiation beam pulse.

14.	The method of claim 11, further comprising reading the number of lines of
10	image data from the detector array.

15.	The method of claim 7, wherein the radiation beam pulse is being used to obtain a x-ray image of an object.

15	16.	The method of claim 15, wherein the obtaining the first set of image data comprises reading all lines of image data from a detector array after the radiation beam pulse has been applied.

17.	The method of claim 15, wherein the obtaining the first set of image data
20	comprises reading image data while the radiation beam pulse is being applied.

18. The method of claim 15, wherein the obtaining the first set of image data comprises reading image data while the radiation beam pulse is not being applied.

5 19. The method of claim 1, wherein the adding is performed in substantially real time.

20. A system for processing data in a radiation procedure, the system comprising:

10   a radiation system;

      an image detector for generating a first set of image data;

      a processor coupled to the radiation system, the processor being configured to receive operation data associated with an operation of the radiation system and put the operation data into a format that is the same as a format of

15 the first set of image data; and

      a memory for storing the operation data with the first set of image data.

21. The system of claim 20, wherein the image detector comprises a detector array that is a part of the radiation system.

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22. The system of claim 20, wherein the image detector is a part of an imaging device that is separate from the radiation system.

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23.　The system of claim 20, wherein the radiation system comprises a computed tomography (CT) system.

5　24.　The system of claim 20, wherein the radiation system comprises a simulator.

25.　The system of claim 20, wherein the operation data comprises one or a combination of a gantry angle, a patient position, a patient orientation, radiation

10　dose rate, radiation dose fraction, beam pulse rate, beam energy, time when beam was activated, time when beam was deactivated, beam variation during an image readout, machine axis information, and machine status information.

26.　The system of claim 20, wherein the processor is configured to format the

15　operation data into a second set of image data.

27.　The system of claim 20, wherein the operation data comprises one or more data associated with one or more respective radiation beam pulses generated by the radiation system.

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28.　A system for processing data in a radiation procedure, the system comprising:

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means for obtaining a first set of image data;

means for obtaining operation data;

means for putting the operation data into a format that is the same as a
format of the first set of image data; and

5   means for adding the operation data to the first set of image data.

29.   The system of claim 28, wherein the means for obtaining the operation
data comprises a radiation system for applying a radiation beam pulse, and an
interface for collecting data associated with an operation of the radiation system.

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30.   The system of claim 29, wherein the radiation beam pulse is being used to
deliver a radiation treatment dose to a patient.

31.   The system of claim 29, wherein the means for obtaining the first set of
15   image data comprises a processor for determining a number of lines of image
data that can be read from a detector array within a period.

32.   The system of claim 29, wherein the radiation beam pulse is being used to
obtain a x-ray image of an object.

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33. The system of claim 32, wherein the means for obtaining the first set of image data comprises means for reading all lines of image data from a detector array after the radiation beam pulse has been applied.

5 34. The system of claim 32, wherein the means for obtaining the first set of image data comprises means for reading image data while the radiation beam pulse is being applied.

35. The system of claim 32, wherein the means for obtaining the first set of

10 image data comprises means for reading image data while the radiation beam pulse is not being applied.

36. The system of claim 28, wherein the means for putting comprises means for formatting the operation data into a second set of image data.

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37. A computer product configured to cause a process to be performed, the process comprising:

obtaining a first set of image data;

obtaining operation data;

20 putting the operation data into a format that is the same as a format of the first set of image data; and

adding the operation data to the first set of image data.

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38. The computer product of claim 37, wherein the adding is performed in substantially real time.

5 39. A method for processing data in a radiation procedure, the method comprising:

obtaining operation data, the operation data comprises one or a combination of a gantry angle, a patient position, a patient orientation, radiation dose rate, radiation dose fraction, beam pulse rate, beam energy, time when

10 beam was activated, time when beam was deactivated, beam variation during an image readout, machine axis information, and machine status information; and

formatting the operation data into a set of image data.

40. The method of claim 39, wherein the obtaining the operation data

15 comprises applying a radiation beam pulse using a radiation system, and collecting data associated with an operation of the radiation system.

41. The method of claim 40, wherein the radiation beam pulse is being used to deliver a radiation treatment dose to a patient.

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42. The method of claim 40, wherein the radiation beam pulse is being used to obtain a x-ray image of an object.

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43.   The method of claim 39, wherein the operation data comprises one or more data associated with one or more respective radiation beam pulses generated by the radiation system.

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44.   The method of claim 39, wherein the formatting comprises processing the operation data such that the operation data can be represented by one or more pixels.

10   45.   The method of claim 39, wherein the formatting comprises converting the operation data into one or more lines of pixels.

46.   The method of claim 45, wherein the one or more lines of pixels comprises a column or a row of pixels.

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47.   The method of claim 39, wherein the formatting is performed in substantially real time.

48.   A system for processing data in a radiation procedure, the system

20   comprising:

        means for obtaining operation data, the operation data comprises one or a combination of a gantry angle, a patient position, a patient orientation, radiation

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dose rate, radiation dose fraction, beam pulse rate, beam energy, time when

beam was activated, time when beam was deactivated, beam variation during an

image readout, machine axis information, and machine status information; and

means for formatting the operation data into a set of image data.

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49.   The system of claim 48, wherein the set of image data comprises one or

more data.

50.   A computer product configured to cause a process to be performed, the

10   process comprising:

obtaining operation data, the operation data comprises the operation data

can include one or a combination of a gantry angle, a patient position, a patient

orientation, radiation dose rate, radiation dose fraction, beam pulse rate, beam

energy, time when beam was activated, time when beam was deactivated, beam

15   variation during an image readout, machine axis information, and machine status

information; and

formatting the operation data into a set of image data.

51.   The computer product of claim 50, wherein the set of image data

20   comprises one or more data.

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52. A method for processing data in a radiation procedure, the method comprising:

    obtaining operation data;

    obtaining an image data; and

5   combining the operation data and the image data in substantially real time.

53. The method of claim 52, wherein the operation data comprises one or a combination of a gantry angle, a patient position, a patient orientation, radiation dose rate, radiation dose fraction, beam pulse rate, beam energy, time when

10 beam was activated, time when beam was deactivated, beam variation during an image readout, machine axis information, and machine status information.